

AMENDMENTS TO THE CLAIMS

Please amend claims 1, 5-7, 9-10, 12, 13, and 16 and cancel claims 4, 8, 14 and 19-20, as set forth in the listing of claims that follows:

1. (Currently Amended) A catalytic converter comprising:
a catalyst substrate comprising a catalyst, and having a first lip concentrically disposed about a first end of said catalyst substrate, a second lip concentrically disposed about a second end of said catalyst substrate, at least one ridge therebetween, and an outer surface such that the ridge is spaced apart from the first lip by said outer surface and spaced apart from the second lip by said outer surface, said outer surface having an outer surface diameter less than the outer diameter of the ridge, having ~~at least one concentric structural feature disposed therebetween, wherein an outer surface diameter is less than or equal to a first lip diameter;~~
a shell having an opening, and concentrically disposed around said catalyst substrate; and
a first mat support material disposed about the outer surface between said ridge and the first lip, and a second mat support disposed about said outer surface between said ridge and the second lip and spaced apart from the first mat support material by a gap between said ridge and said shell. ~~catalyst substrate and said shell, concentrically around said catalyst substrate, between said first lip and said structural feature.~~

2. (Original) A catalytic converter recited in Claim 1, wherein said first lip and said second lip are continuous annular lips.

3. (Original) A catalytic converter recited in Claim 1, wherein said first lip and said second lip are segmented annular lips.

4. (Cancelled)

5. (Currently Amended) A catalytic converter recited in Claim 1, wherein said ridge structural feature comprises a continuous annular geometry.

6. (Currently Amended) A catalytic converter recited in Claim 1, wherein said ridge structural feature comprises a segmented annular geometry.

7. (Currently Amended) A catalytic converter recited in Claim 1, wherein said ridge structural feature has a diameter equal to or smaller than the first lip diameter.

8. (Cancelled)

9. (Currently Amended) A catalytic converter recited in Claim 1 8, wherein said shell further comprises a U-shaped attachment attached to said shell within said gap opposite the ridge ~~concentrically disposed between said shell and said structural feature~~.

10. (Currently Amended) A catalytic converter recited in Claim 9, wherein sides of said U-shaped attachment ring contact edges of said first mat support material and said second mat support material.

11. (Original) A catalytic converter recited in Claim 1, wherein said shell further comprises a first annular shoulder disposed concentrically and circumferentially about said shell adjacent said first lip.

12. (Currently) A catalytic converter recited in Claim 11, wherein ~~further comprising~~ said shell further comprises ~~have~~ a second annular shoulder disposed concentrically and circumferentially about said shell adjacent said second lip.

13. (Currently Amended) A catalytic converter recited in Claim 1, wherein said shell further comprises at least one depressed annular area concentrically and circumferentially disposed about said shell adjacent the ridge, ~~and coinciding with~~ ~~said structural feature~~.

14. (Cancelled)

15. (Original) A catalytic converter recited in Claim 14, wherein said depressed annular area is intermittently depressed around said shell.

16. (Currently Amended) A catalytic converter recited in Claim 15, wherein said intermittent depressions coincide with said ridge ~~structural feature~~ which is intermittent.

17. (Original) A catalytic converter recited in Claim 1, further comprising a mat protection ring concentrically disposed within said shell, concentrically around an end of said catalyst substrate.

18. (Original) A catalytic converter recited in Claim 1, further comprising an endcone, endplate, or exhaust manifold, disposed at one or more ends of said shell.

19-21. (Cancelled)

22. (Withdrawn) A method of manufacturing a catalytic converter comprising:

forming a catalyst substrate comprising a catalyst, said catalyst substrate having a concentric first lip and a concentric second lip with an outer surface concentrically disposed therebetween, wherein an outer surface diameter is less than or equal to a first lip diameter;

forming at least one structural feature concentrically about said outer surface;

disposing a first mat support material between said first lip and said structural feature;

disposing said catalyst substrate and said mat support concentrically within a shell having an opening; and

disposing an endcone, endplate, or manifold on at least one end of said shell.

23. (Withdrawn) A method recited in Claim 22, further comprising forming at least one shoulder concentrically around said shell, adjacent to said structural feature.

24. (Withdrawn) A method recited in Claim 23, wherein said forming said shoulder further comprises using a stamping die and/or a crimping device.

25. (Withdrawn) A method recited in Claim 22, wherein said forming said catalyst substrate further comprises:

extruding an extrudite of said catalyst substrate; and
squeezing said outer surface to form said structural feature.

26. (Withdrawn) A method recited in Claim 22, wherein said forming said catalyst substrate further comprises:

extruding an extrudite of said catalyst substrate; and
applying a ceramic paste to form said structural feature on said outer surface.

27. (Withdrawn) A method recited in Claim 22, wherein said forming said catalyst substrate further comprises:

extruding an extrudite of said catalyst substrate; and
removing a portion of said outer surface of said catalyst substrate to form said structural feature.

28. (Withdrawn) A method recited in Claim 22, further comprising:
sizing compressively said shell about said mat support material and said catalyst substrate.

29. (Withdrawn) A method recited in Claim 22, further comprising disposing a mat support material having a depressed surface between said first lip and said second lip, and over said structural feature.

30. (Withdrawn) A method recited in Claim 29, wherein said disposing further comprises substantially aligning and coinciding said mat support material depressed surface with said structural feature.

31. (Withdrawn) A method recited in Claim 30, wherein said mat support material has a substantially uniform mount density.